

REGENERATIVE BOOTSTRAP FOR SIMULATION OUTPUT ANALYSIS

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ABSTRACT

With the aid of fast computing power, resampling techniques are being introduced for simulation output analysis (SOA). Autocorrelation among the output from discrete-event simulation prohibit the direct application of resampling schemes (Threshold bootstrap, Binary bootstrap, Stationary bootstrap, etc) extend its usage to time-series data such as simulation output. We present a new method for inference from a regenerative process, regenerative bootstrap, that equals or exceeds the performance of classical regenerative method and approximation regeneration techniques. Regenerative bootstrap saves computation time and overcomes the problem of scarce regeneration cycles. Computational results are provided using M/M/1 model.

Key words : simulation output analysis, regenerative process, bootstrap, queueing